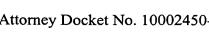
WHAT IS CLAIMED IS:

A method of simulating a circuit, comprising the steps of: identifying a set of logic events associated with said circuit, wherein the logic events are represented as data objects embodying logic equations;

generating a plurality of input test cases;
simulating operation of said circuit utilizing said plurality of input test cases;
tabulating numbers of times that each input test case stimulates logic events; and
identifying logic events that have not been stimulated more than a predetermined
threshold as non-occurring events.

- 2. The method of claim 1 further comprising the steps of: selecting one event of said non-occurring events; and comparing a logic equation of said one event against logic equations of logic events that have been stimulated more than a predetermined threshold.
- 3. The method of claim 2 wherein the step of comparing comprises the sub-step of: assigning scores to compared events, wherein said scores reflect similarity to said one event.
- 4. The method of claim 3 further comprising the step of: utilizing said scores and said numbers of times to weight instructions contained in said input test cases.
 - 5. The method of claim 4 further comprising the step of: constructing a new test case from said weighted instructions.
- 6. The method of claim 5 wherein each test case possesses a plurality of instructions with each instruction respectively associated with generation strides.
 - 7. The method of claim 6 wherein the generation strides are relatively prime.

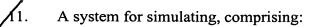


8. The method of claim 5 wherein the step of tabulating comprises the sub-step of: recording numbers of times in a matrix.

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- The method of claim 7 wherein the step of construction comprises the sub-step 9. of: assigning heavily weighted instructions to lower strides.
- The method of claim 7 wherein the step of construction comprises the sub-step 10. of: weighting strides associated with particular instructions.





a data structure including a set of logic events associated with said circuit, wherein the logic events are represented as data objects embodying logic equations;

- a first software routine generating a plurality of input test cases;
- a second software routine applying said plurality of input test cases to a circuit simulator;
- a third software routine tabulating numbers of times that each input test case stimulates logic events; and
- a fourth software routine identifying logic events that have not been stimulated more than a predetermined threshold as non-occurring events.
 - 12. The system of claim 11 further comprising:
- a fifth software routine selecting one event of said non-occurring events; and
 a sixth software routine comparing a logic equation of said one event against logic
 equations of logic events that have been simulated more than a predetermined threshold.
- 13. The system of claim 12 wherein said sixth software routine assigns scores to compared events, wherein said scores reflect similarity to said one event.
 - 14. The system of claim 13 further comprising:

a seventh software routine utilizing said scores and said numbers of times to weight instructions contained in said input test cases.

- 15. The system of claim 14 further comprising:
- an eighth software routine constructing a new test case from said weighted instructions.
- 16. The system of claim 15 wherein each test case possesses a plurality of instructions with each instruction respectively associated with generation strides.
 - 17. The system of claim 16 wherein the generation strides are relatively prime.





Attorney Docket No. 10002450-1

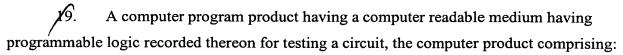
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PATENT

18. The system of claim 15 wherein the third software routine records numbers of times in a matrix.

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means for representing a set of logic events associated with said circuit as data objects embodying logic equations;

means for generating a plurality of input test cases for application to a circuit simulator;

means for tabulating numbers of times that each input test case stimulates logic events;

means for identifying logic events that have not been stimulated more than a predetermined threshold as non-occurring events;

means for selecting one event of said non-occurring events; and means for comparing a logic equation of said one event against logic equations of logic events that have been simulated more than a predetermined threshold.

20. A computer program product of claim 19 further comprising:
means for weighting instructions contained in said input test cases utilizing output
from said means for comparing and said numbers of times; and
means for constructing a new test case from said weighted instructions.